



SEQUENCE LISTING

<110> BODMER, MARK WILLIAM
CHAMPION, BRIAN ROBERT
MCKENZIE, GRAHAME JAMES
NYE, LUCY EMMA

<120> CONJUGATES FOR THE MODULATION OF IMMUNE RESPONSES

<130> 674525-2008

<140> 10/763,362
<141> 2004-01-23

<150> PCT/GB02/03381
<151> 2002-07-25

<150> GB 0118155.1
<151> 2001-07-25

<160> 45

<170> PatentIn Ver. 3.2

<210> 1
<211> 43
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Formula
sequence

<220>
<221> MOD_RES
<222> (2)..(9)
<223> Any amino acid

<220>
<221> MOD_RES
<222> (11)..(13)
<223> Any amino acid

<220>
<221> MOD_RES
<222> (15)..(25)
<223> Any amino acid

<220>
<221> MOD_RES
<222> (27)..(33)
<223> Any amino acid

<220>
<221> MOD_RES
<222> (35)..(42)
<223> Any amino acid

<400> 1

```

Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Cys Xaa Xaa
 1           5           10           15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa
      20           25           30

Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys
      35           40

```

<210> 2

<211> 43

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Formula
sequence

<220>

<221> MOD_RES

<222> (2)..(4)

<223> Any amino acid

<220>

<221> MOD_RES

<222> (5)..(6)

<223> Any aromatic amino acid

<220>

<221> MOD_RES

<222> (7)..(9)

<223> Any amino acid

<220>

<221> MOD_RES

<222> (11)..(13)

<223> Any amino acid

<220>

<221> MOD_RES

<222> (15)..(15)

<223> Any basic amino acid

<220>

<221> MOD_RES

<222> (16)..(16)

<223> Any nonpolar amino acid

<220>

<221> MOD_RES

<222> (17)..(17)

<223> Any basic amino acid

<220>
<221> MOD_RES
<222> (18)..(19)
<223> Any acidic or amide amino acid

<220>
<221> MOD_RES
<222> (20)..(20)
<223> Any amino acid

<220>
<221> MOD_RES
<222> (21)..(21)
<223> Any aromatic amino acid

<220>
<221> MOD_RES
<222> (22)..(22)
<223> Any nonpolar amino acid

<220>
<221> MOD_RES
<222> (23)..(23)
<223> Any aromatic amino acid

<220>
<221> MOD_RES
<222> (24)..(25)
<223> Any amino acid

<220>
<221> MOD_RES
<222> (27)..(29)
<223> Any amino acid

<220>
<221> MOD_RES
<222> (30)..(30)
<223> Any nonpolar amino acid

<220>
<221> MOD_RES
<222> (31)..(33)
<223> Any amino acid

<220>
<221> MOD_RES
<222> (35)..(36)
<223> Any amino acid

<220>
<221> MOD_RES
<222> (37)..(37)
<223> Any nonpolar amino acid

<220>
<221> MOD_RES

<222> (38)..(38)
 <223> Any aromatic amino acid

<220>
 <221> MOD_RES
 <222> (39)..(39)
 <223> Any amino acid

<220>
 <221> MOD_RES
 <222> (40)..(40)
 <223> Any nonpolar amino acid

<220>
 <221> MOD_RES
 <222> (41)..(42)
 <223> Any amino acid

<400> 2
 Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Cys Xaa Xaa
 1 5 10 15
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa
 20 25 30
 Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys
 35 40

<210> 3
 <211> 43
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Formula
 sequence

<220>
 <221> MOD_RES
 <222> (2)..(4)
 <223> Any amino acid

<220>
 <221> MOD_RES
 <222> (7)..(9)
 <223> Any amino acid

<220>
 <221> MOD_RES
 <222> (11)..(13)
 <223> Any amino acid

<220>
 <221> MOD_RES
 <222> (20)..(20)
 <223> Any amino acid

<220>
 <221> MOD_RES
 <222> (24)..(25)
 <223> Any amino acid

<220>
 <221> MOD_RES
 <222> (27)..(29)
 <223> Any amino acid

<220>
 <221> MOD_RES
 <222> (31)..(33)
 <223> Any amino acid

<220>
 <221> MOD_RES
 <222> (35)..(36)
 <223> Any amino acid

<220>
 <221> MOD_RES
 <222> (39)..(39)
 <223> Any amino acid

<220>
 <221> MOD_RES
 <222> (41)..(42)
 <223> Any amino acid

<400> 3
 Cys Xaa Xaa Xaa Tyr Tyr Xaa Xaa Xaa Cys Xaa Xaa Xaa Cys Arg Pro
 1 5 10 15
 Arg Asx Asp Xaa Phe Gly His Xaa Xaa Cys Xaa Xaa Xaa Gly Xaa Xaa
 20 25 30
 Xaa Cys Xaa Xaa Gly Trp Xaa Gly Xaa Xaa Cys
 35 40

<210> 4
 <211> 175
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Formula
 sequence

<220>
 <221> MOD_RES
 <222> (1)..(4)
 <223> Any amino acid

<220>
<221> MOD_RES
<222> (6)..(53)
<223> Any amino acid; this range may consist of 0-48 Xaa residues

<220>
<221> MOD_RES
<222> (55)..(66)
<223> Any amino acid; this range may consist of 3-12 Xaa residues

<220>
<221> MOD_RES
<222> (68)..(137)
<223> Any amino acid; this range may consist of 1-70 Xaa residues

<220>
<221> MOD_RES
<222> (139)..(144)
<223> Any amino acid; this range may consist of 1-6 Xaa residues

<220>
<221> MOD_RES
<222> (146)..(147)
<223> Any amino acid

<220>
<221> MOD_RES
<222> (149)..(149)
<223> Any aromatic amino acid

<220>
<221> MOD_RES
<222> (150)..(170)
<223> Any amino acid; this range may consist of 0-21 Xaa residues

<220>
<221> MOD_RES
<222> (172)..(173)
<223> Any amino acid

<220>
<221> MOD_RES
<222> (175)..(175)
<223> Any amino acid

<220>
<221> DISULFID
<222> (5)..(67)

<220>
<221> DISULFID
<222> (54)..(138)

<220>
<221> DISULFID
<222> (145)..(174)

<400> 4

Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1 5 10 15
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 20 25 30
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 35 40 45
 Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 50 55 60
 Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 65 70 75 80
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 85 90 95
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 100 105 110
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 115 120 125
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa
 130 135 140
 Cys Xaa Xaa Gly Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 145 150 155 160
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Gly Xaa Xaa Cys Xaa
 165 170 175

<210> 5

<211> 887

<212> DNA

<213> Homo sapiens

<400> 5

atgcgttccc cacggacgcg cggccgggtcc gggcgccccc taagcctcct gctcgccctg 60
 ctctgtgccc tgcgagccaa ggtgtgtggg gcctcgggtc agttcgagtt ggagatcctg 120
 tccatgcaga acgtgaacgg ggagctgcag aacgggaact gctgcggcgg cgcccgaac 180
 ccgggagacc gcaagtgcac ccgcgacgag tgtgacacat acttcaaagt gtgcctcaag 240
 gagtatcagt cccgcgtcac ggccgggggg ccctgcagct tcggctcagg gtccacgcct 300
 gtcacgcggg gcaacacctt caacctcaag gccagccgcg gcaacgaccg caaccgcatg 360
 ctgcctttca gtttcgcctg gccgaggtcc tatacgttgc ttgtggaggc gtgggattcc 420
 agtaatgaca ccgttcaacc tgacagtatt attgaaaagg cttctcactc gggcatgata 480
 aacccagacc ggagtgga gacgctgaag cagaacacgg gcgttgccca ctttgagtat 540
 cagatccgcg tgacctgtga tgactactac tatggctttg gctgcaataa gttctgccgc 600
 cccagagatg acttctttgg acactatgcc tgtgaccaga atggcaacaa aacttgcatg 660
 gaaggctgga tgggccccga atgtaacaga gctatttgcc gacaaggctg cagtcctaag 720
 catgggtctt gcaaactccc aggtgactgc aggtgccagt atggctggca aggcctgtac 780
 tgtgataagt gcatcccaca cccgggatgc gtccacggca tctgtaatga gccctggcag 840
 tgcctctgtg agaccaactg gggcggccag ctctgtgaca aagatct 887

<210> 6
 <211> 296
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 fusion construct

<400> 6

Met	Arg	Ser	Pro	Arg	Thr	Arg	Gly	Arg	Ser	Gly	Arg	Pro	Leu	Ser	Leu	1	5	10	15
Leu	Leu	Ala	Leu	Leu	Cys	Ala	Leu	Arg	Ala	Lys	Val	Cys	Gly	Ala	Ser	20	25	30	
Gly	Gln	Phe	Glu	Leu	Glu	Ile	Leu	Ser	Met	Gln	Asn	Val	Asn	Gly	Glu	35	40	45	
Leu	Gln	Asn	Gly	Asn	Cys	Cys	Gly	Gly	Ala	Arg	Asn	Pro	Gly	Asp	Arg	50	55	60	
Lys	Cys	Thr	Arg	Asp	Glu	Cys	Asp	Thr	Tyr	Phe	Lys	Val	Cys	Leu	Lys	65	70	75	80
Glu	Tyr	Gln	Ser	Arg	Val	Thr	Ala	Gly	Gly	Pro	Cys	Ser	Phe	Gly	Ser	85	90	95	
Gly	Ser	Thr	Pro	Val	Ile	Gly	Gly	Asn	Thr	Phe	Asn	Leu	Lys	Ala	Ser	100	105	110	
Arg	Gly	Asn	Asp	Pro	Asn	Arg	Ile	Val	Leu	Pro	Phe	Ser	Phe	Ala	Trp	115	120	125	
Pro	Arg	Ser	Tyr	Thr	Leu	Leu	Val	Glu	Ala	Trp	Asp	Ser	Ser	Asn	Asp	130	135	140	
Thr	Val	Gln	Pro	Asp	Ser	Ile	Ile	Glu	Lys	Ala	Ser	His	Ser	Gly	Met	145	150	155	160
Ile	Asn	Pro	Ser	Arg	Gln	Trp	Gln	Thr	Leu	Lys	Gln	Asn	Thr	Gly	Val	165	170	175	
Ala	His	Phe	Glu	Tyr	Gln	Ile	Arg	Val	Thr	Cys	Asp	Asp	Tyr	Tyr	Tyr	180	185	190	
Gly	Phe	Gly	Cys	Asn	Lys	Phe	Cys	Arg	Pro	Arg	Asp	Asp	Phe	Phe	Gly	195	200	205	
His	Tyr	Ala	Cys	Asp	Gln	Asn	Gly	Asn	Lys	Thr	Cys	Met	Glu	Gly	Trp	210	215	220	
Met	Gly	Pro	Glu	Cys	Asn	Arg	Ala	Ile	Cys	Arg	Gln	Gly	Cys	Ser	Pro	225	230	235	240

Lys	His	Gly	Ser	Cys	Lys	Leu	Pro	Gly	Asp	Cys	Arg	Cys	Gln	Tyr	Gly
				245					250					255	
Trp	Gln	Gly	Leu	Tyr	Cys	Asp	Lys	Cys	Ile	Pro	His	Pro	Gly	Cys	Val
			260					265					270		
His	Gly	Ile	Cys	Asn	Glu	Pro	Trp	Gln	Cys	Leu	Cys	Glu	Thr	Asn	Trp
		275					280					285			
Gly	Gly	Gln	Leu	Cys	Asp	Lys	Asp								
	290					295									

```
<210> 7
<211> 90
<212> PRT
<213> Artificial Sequence
```

<220>
<223> Description of Artificial Sequence: Synthetic fusion protein fragment

```

<400> 7
Ser Thr Asn Asp Asn Ile Lys Asp Leu Leu Asp Trp Tyr Ser Ser Gly
  1                               5                               10                               15

Ser Asp Thr Phe Thr Asn Ser Glu Val Leu Asp Asn Ser Leu Gly Ser
      20                               25                               30

Met Arg Ile Lys Asn Thr Asp Gly Ser Ile Ser Leu Ile Ile Phe Pro
      35                               40                               45

Ser Pro Tyr Tyr Ser Pro Ala Phe Thr Lys Gly Glu Lys Val Asp Leu
      50                               55                               60

Asn Thr Lys Arg Thr Lys Lys Ser Gln His Thr Ser Glu Gly Thr Tyr
      65                               70                               75                               80

Ile His Phe Gln Ile Ser Gly Val Thr Asn
      85                               90

```

```
<210> 8
<211> 10
<212> PRT
<213> Artificial Sequence
```

<220>
<223> Description of Artificial Sequence: Linker peptide

```
<400> 8
Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser
  1             5             10
```

<210> 9
<211> 309

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
nucleotide sequence encoding fusion protein

<400> 9
gatctcggct ctggtagcgg aagtggcagc ggctctagta ctaacgacaa catcaaggat 60
ctgcttgact ggtactcttc cgggtcggat acatttacga atagcgaagt attagataat 120
tactaggct caatgagaat aaaaaacacc gacggctcca taagtctcat catttttcca 180
agtccatatt attcgccagc attcacaaaa ggtgaaaaag tagatttgaa tacaaagaga 240
actaaaaagt ctcaacacac cagtgaggga acgtacatac atttcagat tagcggagta 300
acaaattga 309

<210> 10
<211> 52
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 10
ataagaatca gatctcggct ctggtagcgg aagtggcagc ggctctagta ct 52

<210> 11
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 11
gatctgcttg actggtactc ttccgggtcg gatacattta cgaatagc 48

<210> 12
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 12
ggctcaatga gaataaaaaa caccgacggc tccataagtc tcatcatttt t 51

<210> 13
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

 <400> 13
 gcattcacaa aaggtgaaaa agtagatttg aatacaaaga gaactaaaaa g 51

 <210> 14
 <211> 54
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Primer

 <400> 14
 acgtacatac atttccagat tagcggagta acaaattgag aattcataag aatg 54

 <210> 15
 <211> 51
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Primer

 <400> 15
 ccagtcaagc agatccttga tgttgtcggt agtactagag ccgctgccac t 51

 <210> 16
 <211> 51
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Primer

 <400> 16
 tatttcatt gagcctagtg aattatctaa tacttcgcta ttcgtaaattg t 51

 <210> 17
 <211> 54
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Primer

 <400> 17
 accttttgtg aatgctggcg aataatatgg acttggaaaa atgatgagac ttat 54

 <210> 18
 <211> 54

<212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 18
 gaaatgtatg tacgttccct cactggtgtg ttgagacttt ttagttctct ttgt 54

<210> 19
 <211> 17
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 19
 cattcttatg aattctc 17

<210> 20
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 cohesive end fragment

<400> 20
 gatctggggg gctataaaaag ggggta 26

<210> 21
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 cohesive end fragment

<400> 21
 agcttaccct cttttatagc ccccca 26

<210> 22
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 promoter sequence

<400> 22
gatcccgact cgtgggaaaa tgggcggaag ggcaccgtgg gaaaatagta 50

<210> 23
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
promoter sequence

<400> 23
gatctactat tttcccacgg tgcccttcg cccattttcc cagagtcgg 50

<210> 24
<211> 63
<212> PRT
<213> Drosophila melanogaster

<400> 24
Trp Lys Thr Asn Lys Ser Glu Ser Gln Tyr Thr Ser Leu Glu Tyr Asp
1 5 10 15
Phe Arg Val Thr Cys Asp Leu Asn Tyr Tyr Gly Ser Gly Cys Ala Lys
20 25 30
Phe Cys Arg Pro Arg Asp Asp Ser Phe Gly His Ser Thr Cys Ser Glu
35 40 45
Thr Gly Glu Ile Ile Cys Leu Thr Gly Trp Gln Gly Asp Tyr Cys
50 55 60

<210> 25
<211> 63
<212> PRT
<213> Homo sapiens

<400> 25
Trp Ser Gln Asp Leu His Ser Ser Gly Arg Thr Asp Leu Lys Tyr Ser
1 5 10 15
Tyr Arg Phe Val Cys Asp Glu His Tyr Tyr Gly Glu Gly Cys Ser Val
20 25 30
Phe Cys Arg Pro Arg Asp Asp Ala Phe Gly His Phe Thr Cys Gly Glu
35 40 45
Arg Gly Glu Lys Val Cys Asn Pro Gly Trp Lys Gly Pro Tyr Cys
50 55 60

<210> 26
<211> 63

<212> PRT

<213> Mus musculus

<400> 26

```

Trp Ser Gln Asp Leu His Ser Ser Gly Arg Thr Asp Leu Arg Tyr Ser
 1              5              10              15
Tyr Arg Phe Val Cys Asp Glu His Tyr Tyr Gly Glu Gly Cys Ser Val
              20              25              30
Phe Cys Arg Pro Arg Asp Asp Ala Phe Gly His Phe Thr Cys Gly Asp
              35              40              45
Arg Gly Glu Lys Met Cys Asp Pro Gly Trp Lys Gly Gln Tyr Cys
      50              55              60

```

<210> 27

<211> 63

<212> PRT

<213> Rattus norvegicus

<400> 27

```

Trp Ser Gln Asp Leu His Ser Ser Gly Arg Thr Asp Leu Arg Tyr Ser
 1              5              10              15
Tyr Arg Phe Val Cys Asp Glu His Tyr Tyr Gly Glu Gly Cys Ser Val
              20              25              30
Phe Cys Arg Pro Arg Asp Asp Ala Phe Gly His Phe Thr Cys Gly Glu
              35              40              45
Arg Gly Glu Lys Met Cys Asp Pro Gly Trp Lys Gly Gln Tyr Cys
      50              55              60

```

<210> 28

<211> 63

<212> PRT

<213> Mus musculus

<400> 28

```

Trp Arg Thr Asp Glu Gln Asn Asp Thr Leu Thr Arg Leu Ser Tyr Ser
 1              5              10              15
Tyr Arg Val Ile Cys Ser Asp Asn Tyr Tyr Gly Glu Ser Cys Ser Arg
              20              25              30
Leu Cys Lys Lys Arg Asp Asp His Phe Gly His Tyr Glu Cys Gln Pro
              35              40              45
Asp Gly Ser Leu Ser Cys Leu Pro Gly Trp Thr Gly Lys Tyr Cys
      50              55              60

```

<210> 29

<211> 63

<212> PRT

<213> Homo sapiens

<400> 29

```

Trp Leu Leu Asp Glu Gln Thr Ser Thr Leu Thr Arg Leu Arg Tyr Ser
 1              5              10              15
Tyr Arg Val Ile Cys Ser Asp Asn Tyr Tyr Gly Asp Asn Cys Ser Arg
              20              25              30
Leu Cys Lys Lys Arg Asn Asp His Phe Gly His Tyr Val Cys Gln Pro
              35              40              45
Asp Gly Asn Leu Ser Cys Leu Pro Gly Trp Thr Gly Glu Tyr Cys
 50              55              60

```

<210> 30

<211> 63

<212> PRT

<213> Rattus norvegicus

<400> 30

```

Trp Gln Thr Leu Lys Gln Asn Thr Gly Ile Ala His Phe Glu Tyr Gln
 1              5              10              15
Ile Arg Val Thr Cys Asp Asp His Tyr Tyr Gly Phe Gly Cys Asn Lys
              20              25              30
Phe Cys Arg Pro Arg Asp Asp Phe Phe Gly His Tyr Ala Cys Asp Gln
              35              40              45
Asn Gly Asn Lys Thr Cys Met Glu Gly Trp Met Gly Pro Glu Cys
 50              55              60

```

<210> 31

<211> 63

<212> PRT

<213> Mus musculus

<400> 31

```

Trp Gln Thr Leu Lys Gln Asn Thr Gly Ile Ala His Phe Glu Tyr Gln
 1              5              10              15
Ile Arg Val Thr Cys Asp Asp His Tyr Tyr Gly Phe Gly Cys Asn Lys
              20              25              30
Phe Cys Arg Pro Arg Asp Asp Phe Phe Gly His Tyr Ala Cys Asp Gln
              35              40              45
Asn Gly Asn Lys Thr Cys Met Glu Gly Trp Met Gly Pro Asp Cys
 50              55              60

```

<210> 32

<211> 63

<212> PRT

<213> Homo sapiens

<400> 32

```

Trp Gln Thr Leu Lys Gln Asn Thr Gly Val Ala His Phe Glu Tyr Gln
 1              5              10              15
Ile Arg Val Thr Cys Asp Asp Tyr Tyr Tyr Gly Phe Gly Cys Asn Lys
              20              25              30
Phe Cys Arg Pro Arg Asp Asp Phe Phe Gly His Tyr Ala Cys Asp Gln
              35              40              45
Asn Gly Asn Lys Thr Cys Met Glu Gly Trp Met Gly Arg Glu Cys
 50              55              60

```

<210> 33

<211> 63

<212> PRT

<213> Gallus gallus

<400> 33

```

Trp Gln Thr Leu Lys His Asn Thr Gly Ala Ala His Phe Glu Tyr Gln
 1              5              10              15
Ile Arg Val Thr Cys Ala Glu His Tyr Tyr Gly Phe Gly Cys Asn Lys
              20              25              30
Phe Cys Arg Pro Arg Asp Asp Phe Phe Thr His His Thr Cys Asp Gln
              35              40              45
Asn Gly Asn Lys Thr Cys Leu Glu Gly Trp Thr Gly Pro Glu Cys
 50              55              60

```

<210> 34

<211> 63

<212> PRT

<213> Gallus gallus

<400> 34

```

Trp Lys Thr Leu Gln Phe Asn Gly Pro Val Ala Asn Phe Glu Val Gln
 1              5              10              15
Ile Arg Val Lys Cys Asp Glu Asn Tyr Tyr Ser Ala Leu Cys Asn Lys
              20              25              30
Phe Cys Gly Pro Arg Asp Asp Phe Val Gly His Tyr Thr Cys Asp Gln
              35              40              45
Asn Gly Asn Lys Ala Cys Met Glu Gly Trp Met Gly Glu Glu Cys
 50              55              60

```

<210> 35

<211> 63

<212> PRT

<213> Mus musculus

<400> 35

```

Trp Lys Ser Leu His Phe Ser Gly His Val Ala His Leu Glu Leu Gln
 1              5              10              15
Ile Arg Val Arg Cys Asp Glu Asn Tyr Tyr Ser Ala Thr Cys Asn Lys
              20              25              30
Phe Cys Arg Pro Arg Asn Asp Phe Phe Gly His Tyr Thr Cys Asp Gln
              35              40              45
Tyr Gly Asn Lys Ala Cys Met Asp Gly Trp Met Gly Lys Glu Cys
 50              55              60

```

<210> 36

<211> 63

<212> PRT

<213> Homo sapiens

<400> 36

```

Trp Lys Ser Leu His Phe Ser Gly His Val Ala His Leu Glu Leu Gln
 1              5              10              15
Ile Arg Val Arg Cys Asp Glu Asn Tyr Tyr Ser Ala Thr Cys Asn Lys
              20              25              30
Phe Cys Arg Pro Arg Asn Asp Phe Phe Gly His Tyr Thr Cys Asp Gln
              35              40              45
Tyr Gly Asn Lys Ala Cys Met Asp Gly Trp Met Gly Lys Glu Cys
 50              55              60

```

<210> 37

<211> 63

<212> PRT

<213> Rattus norvegicus

<400> 37

```

Trp Lys Ser Leu His Phe Ser Gly His Val Ala His Leu Glu Leu Gln
 1              5              10              15
Ile Arg Val Arg Cys Asp Glu Asn Tyr Tyr Ser Ala Thr Cys Asn Lys
              20              25              30
Phe Cys Arg Pro Arg Asn Asp Phe Phe Gly His Tyr Thr Cys Asp Gln
              35              40              45
Tyr Gly Asn Lys Ala Cys Met Asp Gly Trp Met Gly Lys Glu Cys
 50              55              60

```

<210> 38

<211> 63

<212> PRT

<213> Homo sapiens

<400> 38

```

Trp Lys Ser Leu His Phe Ser Gly His Val Ala His Leu Glu Leu Gln
 1           5           10           15
Ile Arg Val Arg Cys Asp Glu Asn Tyr Tyr Ser Ala Thr Cys Asn Lys
          20           25           30
Phe Cys Arg Pro Arg Asn Asp Phe Phe Gly His Tyr Thr Cys Asp Gln
          35           40           45
Tyr Gly Asn Lys Ala Cys Met Asp Gly Trp Met Gly Lys Glu Cys
 50           55           60

```

<210> 39

<211> 63

<212> PRT

<213> Drosophila melanogaster

<400> 39

```

Trp Lys Thr Leu Asp His Ile Gly Arg Asn Ala Arg Ile Thr Tyr Arg
 1           5           10           15
Val Arg Val Gln Cys Ala Val Thr Tyr Tyr Asn Thr Thr Cys Thr Thr
          20           25           30
Phe Cys Arg Pro Arg Asp Asp Gln Phe Gly His Tyr Ala Cys Gly Ser
          35           40           45
Glu Gly Gln Lys Leu Cys Leu Asn Gly Trp Gln Gly Val Asn Cys
 50           55           60

```

<210> 40

<211> 942

<212> PRT

<213> Homo sapiens

<400> 40

```

Met Gly Ser Arg Cys Ala Leu Ala Leu Ala Val Leu Ser Ala Leu Leu
 1           5           10           15
Cys Gln Val Trp Ser Ser Gly Val Phe Glu Leu Lys Leu Gln Glu Phe
          20           25           30
Val Asn Lys Lys Gly Leu Leu Gly Asn Arg Asn Cys Cys Arg Gly Gly
          35           40           45
Ala Gly Pro Pro Pro Cys Ala Cys Arg Thr Phe Phe Arg Val Cys Leu
          50           55           60
Lys His Tyr Gln Ala Ser Val Ser Pro Glu Pro Pro Cys Thr Tyr Gly
 65           70           75           80

```

Ser Ala Val Thr Pro Val Leu Gly Val Asp Ser Phe Ser Leu Pro Asp
 85 90 95
 Gly Gly Gly Ala Asp Ser Ala Phe Ser Asn Pro Ile Arg Phe Pro Phe
 100 105 110
 Gly Phe Thr Trp Pro Gly Thr Phe Ser Leu Ile Ile Glu Ala Leu His
 115 120 125
 Thr Asp Ser Pro Asp Asp Leu Ala Thr Glu Asn Pro Glu Arg Leu Ile
 130 135 140
 Ser Arg Leu Ala Thr Gln Arg His Leu Thr Val Gly Glu Glu Trp Ser
 145 150 155 160
 Gln Asp Leu His Ser Ser Gly Arg Thr Asp Leu Lys Tyr Ser Tyr Arg
 165 170 175
 Phe Val Cys Asp Glu His Tyr Tyr Gly Glu Gly Cys Ser Val Phe Cys
 180 185 190
 Arg Pro Arg Asp Asp Ala Phe Gly His Phe Thr Cys Gly Glu Arg Gly
 195 200 205
 Glu Lys Val Cys Asn Pro Gly Trp Lys Gly Pro Met Gly Ser Arg Cys
 210 215 220
 Ala Leu Ala Leu Ala Val Leu Ser Ala Leu Leu Cys Gln Val Trp Ser
 225 230 235 240
 Ser Gly Val Phe Glu Leu Lys Leu Gln Glu Phe Val Asn Lys Lys Gly
 245 250 255
 Leu Leu Gly Asn Arg Asn Cys Cys Arg Gly Gly Ala Gly Pro Pro Pro
 260 265 270
 Cys Ala Cys Arg Thr Phe Phe Arg Val Cys Leu Lys His Tyr Gln Ala
 275 280 285
 Ser Val Ser Pro Glu Pro Pro Cys Thr Tyr Gly Ser Ala Val Thr Pro
 290 295 300
 Val Leu Gly Val Asp Ser Phe Ser Leu Pro Asp Gly Gly Gly Ala Asp
 305 310 315 320
 Ser Ala Phe Ser Asn Pro Ile Arg Phe Pro Phe Gly Phe Thr Trp Pro
 325 330 335
 Gly Thr Phe Ser Leu Ile Ile Glu Ala Leu His Thr Asp Ser Pro Asp
 340 345 350
 Asp Leu Ala Thr Glu Asn Pro Glu Arg Leu Ile Ser Arg Leu Ala Thr
 355 360 365
 Gln Arg His Leu Thr Val Gly Glu Glu Trp Ser Gln Asp Leu His Ser
 370 375 380

Ser Gly Arg Thr Asp Leu Lys Tyr Ser Tyr Arg Phe Val Cys Asp Glu
 385 390 395 400
 His Tyr Tyr Gly Glu Gly Cys Ser Val Phe Cys Arg Pro Arg Asp Asp
 405 410 415
 Ala Phe Gly His Phe Thr Cys Gly Glu Arg Gly Glu Lys Val Cys Asn
 420 425 430
 Pro Gly Trp Lys Gly Pro Tyr Cys Thr Glu Pro Ile Cys Leu Pro Gly
 435 440 445
 Cys Asp Glu Gln His Gly Phe Cys Asp Lys Pro Gly Glu Cys Lys Cys
 450 455 460
 Arg Val Gly Trp Gln Gly Arg Tyr Cys Asp Glu Cys Ile Arg Tyr Pro
 465 470 475 480
 Gly Cys Leu His Gly Thr Cys Gln Gln Pro Trp Gln Cys Asn Cys Gln
 485 490 495
 Glu Gly Trp Gly Gly Leu Phe Cys Asn Gln Asp Leu Asn Tyr Cys Thr
 500 505 510
 His His Lys Pro Cys Lys Asn Gly Ala Thr Cys Thr Asn Thr Gly Gln
 515 520 525
 Gly Ser Tyr Thr Cys Ser Cys Arg Pro Gly Tyr Thr Gly Ala Thr Cys
 530 535 540
 Glu Leu Gly Ile Asp Glu Cys Asp Pro Ser Pro Cys Lys Asn Gly Gly
 545 550 555 560
 Ser Cys Thr Asp Leu Glu Asn Ser Tyr Ser Cys Thr Cys Pro Pro Gly
 565 570 575
 Phe Tyr Gly Lys Ile Cys Glu Leu Ser Ala Met Thr Cys Ala Asp Gly
 580 585 590
 Pro Cys Phe Asn Gly Gly Arg Cys Ser Asp Ser Pro Asp Gly Gly Tyr
 595 600 605
 Ser Cys Arg Cys Pro Val Gly Tyr Ser Gly Phe Asn Cys Glu Lys Lys
 610 615 620
 Ile Asp Tyr Cys Ser Ser Ser Pro Cys Ser Asn Gly Ala Lys Cys Val
 625 630 635 640
 Asp Leu Gly Asp Ala Tyr Leu Cys Arg Cys Gln Ala Gly Phe Ser Gly
 645 650 655
 Arg His Cys Asp Asp Asn Val Asp Asp Cys Ala Ser Ser Pro Cys Ala
 660 665 670
 Asn Gly Gly Thr Cys Arg Asp Gly Val Asn Asp Phe Ser Cys Thr Cys
 675 680 685

Pro Pro Gly Tyr Thr Gly Arg Asn Cys Ser Ala Pro Val Ser Arg Cys
 690 695 700
 Glu His Ala Pro Cys His Asn Gly Ala Thr Cys His Glu Arg Gly His
 705 710 715 720
 Gly Tyr Val Cys Glu Cys Ala Arg Gly Tyr Gly Gly Pro Asn Cys Gln
 725 730 735
 Phe Leu Leu Pro Glu Leu Pro Pro Gly Pro Ala Val Val Asp Leu Thr
 740 745 750
 Glu Lys Leu Glu Gly Gln Gly Gly Pro Phe Pro Trp Val Ala Val Cys
 755 760 765
 Ala Gly Val Ile Leu Val Leu Met Leu Leu Leu Gly Cys Ala Ala Val
 770 775 780
 Val Val Cys Val Arg Leu Arg Leu Gln Lys His Arg Pro Pro Ala Asp
 785 790 795 800
 Pro Cys Arg Gly Glu Thr Glu Thr Met Asn Asn Leu Ala Asn Cys Gln
 805 810 815
 Arg Glu Lys Asp Ile Ser Val Ser Ile Ile Gly Ala Thr Gln Ile Lys
 820 825 830
 Asn Thr Asn Lys Lys Ala Asp Phe His Gly Asp His Ser Ala Asp Lys
 835 840 845
 Asn Gly Phe Lys Ala Arg Tyr Pro Ala Val Asp Tyr Asn Leu Val Gln
 850 855 860
 Asp Leu Lys Gly Asp Asp Thr Ala Val Arg Asp Ala His Ser Lys Arg
 865 870 875 880
 Asp Thr Lys Cys Gln Pro Gln Gly Ser Ser Gly Glu Glu Lys Gly Thr
 885 890 895
 Pro Thr Thr Leu Arg Gly Gly Glu Ala Ser Glu Arg Lys Arg Pro Asp
 900 905 910
 Ser Gly Cys Ser Thr Ser Lys Asp Thr Lys Tyr Gln Ser Val Tyr Val
 915 920 925
 Ile Ser Glu Glu Lys Asp Glu Cys Val Ile Ala Thr Glu Val
 930 935 940

 <210> 41
 <211> 618
 <212> PRT
 <213> Homo sapiens

 <400> 41
 Met Val Ser Pro Arg Met Ser Gly Leu Leu Ser Gln Thr Val Ile Leu
 1 5 10 15

Ala	Leu	Ile	Phe	Leu	Pro	Gln	Thr	Arg	Pro	Ala	Gly	Val	Phe	Glu	Leu	
			20				25						30			
Gln	Ile	His	Ser	Phe	Gly	Pro	Gly	Pro	Gly	Pro	Gly	Ala	Pro	Arg	Ser	
			35				40						45			
Pro	Cys	Ser	Ala	Arg	Leu	Pro	Cys	Arg	Leu	Phe	Phe	Arg	Val	Cys	Leu	
			50				55						60			
Lys	Pro	Gly	Leu	Ser	Glu	Glu	Ala	Ala	Glu	Ser	Pro	Cys	Ala	Leu	Gly	
			65				70						75			
Ala	Ala	Leu	Ser	Ala	Arg	Gly	Pro	Val	Tyr	Thr	Glu	Gln	Pro	Gly	Ala	
			85						90						95	
Pro	Ala	Pro	Asp	Leu	Pro	Leu	Pro	Asp	Gly	Leu	Leu	Gln	Val	Pro	Phe	
			100				105						110			
Arg	Asp	Ala	Trp	Pro	Gly	Thr	Phe	Ser	Phe	Ile	Ile	Glu	Thr	Trp	Arg	
			115				120						125			
Glu	Glu	Leu	Gly	Asp	Gln	Ile	Gly	Gly	Pro	Ala	Trp	Ser	Leu	Leu	Ala	
			130				135						140			
Arg	Val	Ala	Gly	Arg	Arg	Arg	Leu	Ala	Ala	Gly	Gly	Pro	Trp	Ala	Arg	
			145				150						155			
Asp	Ile	Gln	Arg	Ala	Gly	Ala	Trp	Glu	Leu	Arg	Phe	Ser	Tyr	Arg	Ala	
			165						170						175	
Arg	Cys	Glu	Pro	Pro	Ala	Val	Gly	Thr	Ala	Cys	Thr	Arg	Leu	Cys	Arg	
			180						185						190	
Pro	Arg	Ser	Ala	Pro	Ser	Arg	Cys	Gly	Pro	Gly	Leu	Arg	Pro	Cys	Ala	
			195						200						205	
Pro	Leu	Glu	Asp	Glu	Cys	Glu	Ala	Pro	Leu	Val	Cys	Arg	Ala	Gly	Cys	
			210						215						220	
Ser	Pro	Glu	His	Gly	Phe	Cys	Glu	Gln	Pro	Gly	Glu	Cys	Arg	Cys	Leu	
			225						230						235	
Glu	Gly	Trp	Thr	Gly	Pro	Leu	Cys	Thr	Val	Pro	Val	Ser	Thr	Ser	Ser	
			245						250						255	
Cys	Leu	Ser	Pro	Arg	Gly	Pro	Ser	Ser	Ala	Thr	Thr	Gly	Cys	Leu	Val	
			260						265						270	
Pro	Gly	Pro	Gly	Pro	Cys	Asp	Gly	Asn	Pro	Cys	Ala	Asn	Gly	Gly	Ser	
			275						280						285	
Cys	Ser	Glu	Thr	Pro	Arg	Ser	Phe	Glu	Cys	Thr	Cys	Pro	Arg	Gly	Phe	
			290						295						300	
Tyr	Gly	Leu	Arg	Cys	Glu	Val	Ser	Gly	Val	Thr	Cys	Ala	Asp	Gly	Pro	
			305						310						315	
															320	

Cys Phe Asn Gly Gly Leu Cys Val Gly Gly Ala Asp Pro Asp Ser Ala
 325 330 335
 Tyr Ile Cys His Cys Pro Pro Gly Phe Gln Gly Ser Asn Cys Glu Lys
 340 345 350
 Arg Val Asp Arg Cys Ser Leu Gln Pro Cys Arg Asn Gly Gly Leu Cys
 355 360 365
 Leu Asp Leu Gly His Ala Leu Arg Cys Arg Cys Arg Ala Gly Phe Ala
 370 375 380
 Gly Pro Arg Cys Glu His Asp Leu Asp Asp Cys Ala Gly Arg Ala Cys
 385 390 395 400
 Ala Asn Gly Gly Thr Cys Val Glu Gly Gly Gly Ala His Arg Cys Ser
 405 410 415
 Cys Ala Leu Gly Phe Gly Gly Arg Asp Cys Arg Glu Arg Ala Asp Pro
 420 425 430
 Cys Ala Ala Arg Pro Cys Ala His Gly Gly Arg Cys Tyr Ala His Phe
 435 440 445
 Ser Gly Leu Val Cys Ala Cys Ala Pro Gly Tyr Met Gly Ala Arg Cys
 450 455 460
 Glu Phe Pro Val His Pro Asp Gly Ala Ser Ala Leu Pro Ala Ala Pro
 465 470 475 480
 Pro Gly Leu Arg Pro Gly Asp Pro Gln Arg Tyr Leu Leu Pro Pro Ala
 485 490 495
 Leu Gly Leu Leu Val Ala Ala Gly Val Ala Gly Ala Ala Leu Leu Leu
 500 505 510
 Val His Val Arg Arg Arg Gly His Ser Gln Asp Ala Gly Ser Arg Leu
 515 520 525
 Leu Ala Gly Thr Pro Glu Pro Ser Val His Ala Leu Pro Asp Ala Leu
 530 535 540
 Asn Asn Leu Arg Thr Gln Glu Gly Ser Gly Asp Gly Pro Ser Ser Ser
 545 550 555 560
 Val Asp Trp Asn Arg Pro Glu Asp Val Asp Pro Gln Gly Ile Tyr Val
 565 570 575
 Ile Ser Ala Pro Ser Ile Tyr Ala Arg Glu Val Ala Thr Pro Leu Phe
 580 585 590
 Pro Pro Leu His Thr Gly Arg Ala Gly Gln Arg Gln His Leu Leu Phe
 595 600 605
 Pro Tyr Pro Ser Ser Ile Leu Ser Val Lys
 610 615

<210> 42
 <211> 685
 <212> PRT
 <213> Homo sapiens

<400> 42
 Met Ala Ala Ala Ser Arg Ser Ala Ser Gly Trp Ala Leu Leu Leu Leu
 1 5 10 15
 Val Ala Leu Trp Gln Gln Arg Ala Ala Gly Ser Gly Val Phe Gln Leu
 20 25 30
 Gln Leu Gln Glu Phe Ile Asn Glu Arg Gly Val Leu Ala Ser Gly Arg
 35 40 45
 Pro Cys Glu Pro Gly Cys Arg Thr Phe Phe Arg Val Cys Leu Lys His
 50 55 60
 Phe Gln Ala Val Val Ser Pro Gly Pro Cys Thr Phe Gly Thr Val Ser
 65 70 75 80
 Thr Pro Val Leu Gly Thr Asn Ser Phe Ala Val Arg Asp Asp Ser Ser
 85 90 95
 Gly Gly Gly Arg Asn Pro Leu Gln Leu Pro Phe Asn Phe Thr Trp Pro
 100 105 110
 Gly Thr Phe Ser Leu Ile Ile Glu Ala Trp His Ala Pro Gly Asp Asp
 115 120 125
 Leu Arg Pro Glu Ala Leu Pro Pro Asp Ala Leu Ile Ser Lys Ile Ala
 130 135 140
 Ile Gln Gly Ser Leu Ala Val Gly Gln Asn Trp Leu Leu Asp Glu Gln
 145 150 155 160
 Thr Ser Thr Leu Thr Arg Leu Arg Tyr Ser Tyr Arg Val Ile Cys Ser
 165 170 175
 Asp Asn Tyr Tyr Gly Asp Asn Cys Ser Arg Leu Cys Lys Lys Arg Asn
 180 185 190
 Asp His Phe Gly His Tyr Val Cys Gln Pro Asp Gly Asn Leu Ser Cys
 195 200 205
 Leu Pro Gly Trp Thr Gly Glu Tyr Cys Gln Gln Pro Ile Cys Leu Ser
 210 215 220
 Gly Cys His Glu Gln Asn Gly Tyr Cys Ser Lys Pro Ala Glu Cys Leu
 225 230 235 240
 Cys Arg Pro Gly Trp Gln Gly Arg Leu Cys Asn Glu Cys Ile Pro His
 245 250 255

Asn Gly Cys Arg His Gly Thr Cys Ser Thr Pro Trp Gln Cys Thr Cys
 260 265 270
 Asp Glu Gly Trp Gly Gly Leu Phe Cys Asp Gln Asp Leu Asn Tyr Cys
 275 280 285
 Thr His His Ser Pro Cys Lys Asn Gly Ala Thr Cys Ser Asn Ser Gly
 290 295 300
 Gln Arg Ser Tyr Thr Cys Thr Cys Arg Pro Gly Tyr Thr Gly Val Asp
 305 310 315 320
 Cys Glu Leu Glu Leu Ser Glu Cys Asp Ser Asn Pro Cys Arg Asn Gly
 325 330 335
 Gly Ser Cys Lys Asp Gln Glu Asp Gly Tyr His Cys Leu Cys Pro Pro
 340 345 350
 Gly Tyr Tyr Gly Leu His Cys Glu His Ser Thr Leu Ser Cys Ala Asp
 355 360 365
 Ser Pro Cys Phe Asn Gly Gly Ser Cys Arg Glu Arg Asn Gln Gly Ala
 370 375 380
 Asn Tyr Ala Cys Glu Cys Pro Pro Asn Phe Thr Gly Ser Asn Cys Glu
 385 390 395 400
 Lys Lys Val Asp Arg Cys Thr Ser Asn Pro Cys Ala Asn Gly Gly Gln
 405 410 415
 Cys Leu Asn Arg Gly Pro Ser Arg Met Cys Arg Cys Arg Pro Gly Phe
 420 425 430
 Thr Gly Thr Tyr Cys Glu Leu His Val Ser Asp Cys Ala Arg Asn Pro
 435 440 445
 Cys Ala His Gly Gly Thr Cys His Asp Leu Glu Asn Gly Leu Met Cys
 450 455 460
 Thr Cys Pro Ala Gly Phe Ser Gly Arg Arg Cys Glu Val Arg Thr Ser
 465 470 475 480
 Ile Asp Ala Cys Ala Ser Ser Pro Cys Phe Asn Arg Ala Thr Cys Tyr
 485 490 495
 Thr Asp Leu Ser Thr Asp Thr Phe Val Cys Asn Cys Pro Tyr Gly Phe
 500 505 510
 Val Gly Ser Arg Cys Glu Phe Pro Val Gly Leu Pro Pro Ser Phe Pro
 515 520 525
 Trp Val Ala Val Ser Leu Gly Val Gly Leu Ala Val Leu Leu Val Leu
 530 535 540
 Leu Gly Met Val Ala Val Ala Val Arg Gln Leu Arg Leu Arg Arg Pro
 545 550 555 560

• 1) •

• 1) •

• 1) •

Thr Val Gln Pro Asp Ser Ile Ile Glu Lys Ala Ser His Ser Gly Met
 145 150 155 160
 Ile Asn Pro Ser Arg Gln Trp Gln Thr Leu Lys Gln Asn Thr Gly Val
 165 170 175
 Ala His Phe Glu Tyr Gln Ile Arg Val Thr Cys Asp Asp Tyr Tyr Tyr
 180 185 190
 Gly Phe Gly Cys Asn Lys Phe Cys Arg Pro Arg Asp Asp Phe Phe Gly
 195 200 205
 His Tyr Ala Cys Asp Gln Asn Gly Asn Lys Thr Cys Met Glu Gly Trp
 210 215 220
 Met Gly Pro Glu Cys Asn Arg Ala Ile Cys Arg Gln Gly Cys Ser Pro
 225 230 235 240
 Lys His Gly Ser Cys Lys Leu Pro Gly Asp Cys Arg Cys Gln Tyr Gly
 245 250 255
 Trp Gln Gly Leu Tyr Cys Asp Lys Cys Ile Pro His Pro Gly Cys Val
 260 265 270
 His Gly Ile Cys Asn Glu Pro Trp Gln Cys Leu Cys Glu Thr Asn Trp
 275 280 285
 Gly Gly Gln Leu Cys Asp Lys Asp Leu Asn Tyr Cys Gly Thr His Gln
 290 295 300
 Pro Cys Leu Asn Gly Gly Thr Cys Ser Asn Thr Gly Pro Asp Lys Tyr
 305 310 315 320
 Gln Cys Ser Cys Pro Glu Gly Tyr Ser Gly Pro Asn Cys Glu Ile Ala
 325 330 335
 Glu His Ala Cys Leu Ser Asp Pro Cys His Asn Arg Gly Ser Cys Lys
 340 345 350
 Glu Thr Ser Leu Gly Phe Glu Cys Glu Cys Ser Pro Gly Trp Thr Gly
 355 360 365
 Pro Thr Cys Ser Thr Asn Ile Asp Asp Cys Ser Pro Asn Asn Cys Ser
 370 375 380
 His Gly Gly Thr Cys Gln Asp Leu Val Asn Gly Phe Lys Cys Val Cys
 385 390 395 400
 Pro Pro Gln Trp Thr Gly Lys Thr Cys Gln Leu Asp Ala Asn Glu Cys
 405 410 415
 Glu Ala Lys Pro Cys Val Asn Ala Lys Ser Cys Lys Asn Leu Ile Ala
 420 425 430
 Ser Tyr Tyr Cys Asp Cys Leu Pro Gly Trp Met Gly Gln Asn Cys Asp
 435 440 445

Ile Asn Ile Asn Asp Cys Leu Gly Gln Cys Gln Asn Asp Ala Ser Cys
 450 455 460
 Arg Asp Leu Val Asn Gly Tyr Arg Cys Ile Cys Pro Pro Gly Tyr Ala
 465 470 475 480
 Gly Asp His Cys Glu Arg Asp Ile Asp Glu Cys Ala Ser Asn Pro Cys
 485 490 495
 Leu Asn Gly Gly His Cys Gln Asn Glu Ile Asn Arg Phe Gln Cys Leu
 500 505 510
 Cys Pro Thr Gly Phe Ser Gly Asn Leu Cys Gln Leu Asp Ile Asp Tyr
 515 520 525
 Cys Glu Pro Asn Pro Cys Gln Asn Gly Ala Gln Cys Tyr Asn Arg Ala
 530 535 540
 Ser Asp Tyr Phe Cys Lys Cys Pro Glu Asp Tyr Glu Gly Lys Asn Cys
 545 550 555 560
 Ser His Leu Lys Asp His Cys Arg Thr Thr Pro Cys Glu Val Ile Asp
 565 570 575
 Ser Cys Thr Val Ala Met Ala Ser Asn Asp Thr Pro Glu Gly Val Arg
 580 585 590
 Tyr Ile Ser Ser Asn Val Cys Gly Pro His Gly Lys Cys Lys Ser Gln
 595 600 605
 Ser Gly Gly Lys Phe Thr Cys Asp Cys Asn Lys Gly Phe Thr Gly Thr
 610 615 620
 Tyr Cys His Glu Asn Ile Asn Asp Cys Glu Ser Asn Pro Cys Arg Asn
 625 630 635 640
 Gly Gly Thr Cys Ile Asp Gly Val Asn Ser Tyr Lys Cys Ile Cys Ser
 645 650 655
 Asp Gly Trp Glu Gly Ala Tyr Cys Glu Thr Asn Ile Asn Asp Cys Ser
 660 665 670
 Gln Asn Pro Cys His Asn Gly Gly Thr Cys Arg Asp Leu Val Asn Asp
 675 680 685
 Phe Tyr Cys Asp Cys Lys Asn Gly Trp Lys Gly Lys Thr Cys His Ser
 690 695 700
 Arg Asp Ser Gln Cys Asp Glu Ala Thr Cys Asn Asn Gly Gly Thr Cys
 705 710 715 720
 Tyr Asp Glu Gly Asp Ala Phe Lys Cys Met Cys Pro Gly Gly Trp Glu
 725 730 735
 Gly Thr Thr Cys Asn Ile Ala Arg Asn Ser Ser Cys Leu Pro Asn Pro
 740 745 750

Cys His Asn Gly Gly Thr Cys Val Val Asn Gly Glu Ser Phe Thr Cys
 755 760 765
 Val Cys Lys Glu Gly Trp Glu Gly Pro Ile Cys Ala Gln Asn Thr Asn
 770 775 780
 Asp Cys Ser Pro His Pro Cys Tyr Asn Ser Gly Thr Cys Val Asp Gly
 785 790 795 800
 Asp Asn Trp Tyr Arg Cys Glu Cys Ala Pro Gly Phe Ala Gly Pro Asp
 805 810 815
 Cys Arg Ile Asn Ile Asn Glu Cys Gln Ser Ser Pro Cys Ala Phe Gly
 820 825 830
 Ala Thr Cys Val Asp Glu Ile Asn Gly Tyr Arg Cys Val Cys Pro Pro
 835 840 845
 Gly His Ser Gly Ala Lys Cys Gln Glu Val Ser Gly Arg Pro Cys Ile
 850 855 860
 Thr Met Gly Ser Val Ile Pro Asp Gly Ala Lys Trp Asp Asp Asp Cys
 865 870 875 880
 Asn Thr Cys Gln Cys Leu Asn Gly Arg Ile Ala Cys Ser Lys Val Trp
 885 890 895
 Cys Gly Pro Arg Pro Cys Leu Leu His Lys Gly His Ser Glu Cys Pro
 900 905 910
 Ser Gly Gln Ser Cys Ile Pro Ile Leu Asp Asp Gln Cys Phe Val His
 915 920 925
 Pro Cys Thr Gly Val Gly Glu Cys Arg Ser Ser Ser Leu Gln Pro Val
 930 935 940
 Lys Thr Lys Cys Thr Ser Asp Ser Tyr Tyr Gln Asp Asn Cys Ala Asn
 945 950 955 960
 Ile Thr Phe Thr Phe Asn Lys Glu Met Met Ser Pro Gly Leu Thr Thr
 965 970 975
 Glu His Ile Cys Ser Glu Leu Arg Asn Leu Asn Ile Leu Lys Asn Val
 980 985 990
 Ser Ala Glu Tyr Ser Ile Tyr Ile Ala Cys Glu Pro Ser Pro Ser Ala
 995 1000 1005
 Asn Asn Glu Ile His Val Ala Ile Ser Ala Glu Asp Ile Arg Asp Asp
 1010 1015 1020
 Gly Asn Pro Ile Lys Glu Ile Thr Asp Lys Ile Ile Asp Leu Val Ser
 1025 1030 1035 1040
 Lys Arg Asp Gly Asn Ser Ser Leu Ile Ala Ala Val Ala Glu Val Arg
 1045 1050 1055

Val Gln Arg Arg Pro Leu Lys Asn Arg Thr Asp Phe Leu Val Pro Leu
 1060 1065 1070
 Leu Ser Ser Val Leu Thr Val Ala Trp Ile Cys Cys Leu Val Thr Ala
 1075 1080 1085
 Phe Tyr Trp Cys Leu Arg Lys Arg Arg Lys Pro Gly Ser His Thr His
 1090 1095 1100
 Ser Ala Ser Glu Asp Asn Thr Thr Asn Asn Val Arg Glu Gln Leu Asn
 1105 1110 1115 1120
 Gln Ile Lys Asn Pro Ile Glu Lys His Gly Ala Asn Thr Val Pro Ile
 1125 1130 1135
 Lys Asp Tyr Glu Asn Lys Asn Ser Lys Met Ser Lys Ile Arg Thr His
 1140 1145 1150
 Asn Ser Glu Val Glu Glu Asp Asp Met Asp Lys His Gln Gln Lys Ala
 1155 1160 1165
 Arg Phe Ala Lys Gln Pro Ala Tyr Thr Leu Val Asp Arg Glu Glu Lys
 1170 1175 1180
 Pro Pro Asn Gly Thr Pro Thr Lys His Pro Asn Trp Thr Asn Lys Gln
 1185 1190 1195 1200
 Asp Asn Arg Asp Leu Glu Ser Ala Gln Ser Leu Asn Arg Met Glu Tyr
 1205 1210 1215
 Ile Val

<210> 44
 <211> 1238
 <212> PRT
 <213> Homo sapiens

<400> 44
 Met Arg Ala Gln Gly Arg Gly Arg Leu Pro Arg Arg Leu Leu Leu Leu
 1 5 10 15
 Leu Ala Leu Trp Val Gln Ala Ala Arg Pro Met Gly Tyr Phe Glu Leu
 20 25 30
 Gln Leu Ser Ala Leu Arg Asn Val Asn Gly Glu Leu Leu Ser Gly Ala
 35 40 45
 Cys Cys Asp Gly Asp Gly Arg Thr Thr Arg Ala Gly Gly Cys Gly His
 50 55 60
 Asp Glu Cys Asp Thr Tyr Val Arg Val Cys Leu Lys Glu Tyr Gln Ala
 65 70 75 80

i

```

Asp Ile Asp Glu Cys Ala Ser Asn Pro Cys Ala Ala Gly Gly Thr Cys
385                               390                               395                               400

Val Asp Gln Val Asp Gly Phe Glu Cys Ile Cys Pro Glu Gln Trp Val
                               405                               410                               415

Gly Ala Thr Cys Gln Leu Asp Ala Asn Glu Cys Glu Gly Lys Pro Cys
                               420                               425                               430

Leu Asn Ala Phe Ser Cys Lys Asn Leu Ile Gly Gly Tyr Tyr Cys Asp
                               435                               440                               445

Cys Ile Pro Gly Trp Lys Gly Ile Asn Cys His Ile Asn Val Asn Asp
450                               455                               460

Cys Arg Gly Gln Cys Gln His Gly Gly Thr Cys Lys Asp Leu Val Asn
465                               470                               475                               480

Gly Tyr Gln Cys Val Cys Pro Arg Gly Phe Gly Gly Arg His Cys Glu
                               485                               490                               495

Leu Glu Arg Asp Lys Cys Ala Ser Ser Pro Cys His Ser Gly Gly Leu
                               500                               505                               510

Cys Glu Asp Leu Ala Asp Gly Phe His Cys His Cys Pro Gln Gly Phe
515                               520                               525

Ser Gly Pro Leu Cys Glu Val Asp Val Asp Leu Cys Glu Pro Ser Pro
530                               535                               540

Cys Arg Asn Gly Ala Arg Cys Tyr Asn Leu Glu Gly Asp Tyr Tyr Cys
545                               550                               555                               560

Ala Cys Pro Asp Asp Phe Gly Gly Lys Asn Cys Ser Val Pro Arg Glu
                               565                               570                               575

Pro Cys Pro Gly Gly Ala Cys Arg Val Ile Asp Gly Cys Gly Ser Asp
580                               585                               590

Ala Gly Pro Gly Met Pro Gly Thr Ala Ala Ser Gly Val Cys Gly Pro
595                               600                               605

His Gly Arg Cys Val Ser Gln Pro Gly Gly Asn Phe Ser Cys Ile Cys
610                               615                               620

Asp Ser Gly Phe Thr Gly Thr Tyr Cys His Glu Asn Ile Asp Asp Cys
625                               630                               635                               640

Leu Gly Gln Pro Cys Arg Asn Gly Gly Thr Cys Ile Asp Glu Val Asp
645                               650                               655

Ala Phe Arg Cys Phe Cys Pro Ser Gly Trp Glu Gly Glu Leu Cys Asp
660                               665                               670

Thr Asn Pro Asn Asp Cys Leu Pro Asp Pro Cys His Ser Arg Gly Arg
675                               680                               685

```

Cys Tyr Asp Leu Val Asn Asp Phe Tyr Cys Ala Cys Asp Asp Gly Trp
 690 695 700
 Lys Gly Lys Thr Cys His Ser Arg Glu Phe Gln Cys Asp Ala Tyr Thr
 705 710 715 720
 Cys Ser Asn Gly Gly Thr Cys Tyr Asp Ser Gly Asp Thr Phe Arg Cys
 725 730 735
 Ala Cys Pro Pro Gly Trp Lys Gly Ser Thr Cys Ala Val Ala Lys Asn
 740 745 750
 Ser Ser Cys Leu Pro Asn Pro Cys Val Asn Gly Gly Thr Cys Val Gly
 755 760 765
 Ser Gly Ala Ser Phe Ser Cys Ile Cys Arg Asp Gly Trp Glu Gly Arg
 770 775 780
 Thr Cys Thr His Asn Thr Asn Asp Cys Asn Pro Leu Pro Cys Tyr Asn
 785 790 795 800
 Gly Gly Ile Cys Val Asp Gly Val Asn Trp Phe Arg Cys Glu Cys Ala
 805 810 815
 Pro Gly Phe Ala Gly Pro Asp Cys Arg Ile Asn Ile Asp Glu Cys Gln
 820 825 830
 Ser Ser Pro Cys Ala Tyr Gly Ala Thr Cys Val Asp Glu Ile Asn Gly
 835 840 845
 Tyr Arg Cys Ser Cys Pro Pro Gly Arg Ala Gly Pro Arg Cys Gln Glu
 850 855 860
 Val Ile Gly Phe Gly Arg Ser Cys Trp Ser Arg Gly Thr Pro Phe Pro
 865 870 875 880
 His Gly Ser Ser Trp Val Glu Asp Cys Asn Ser Cys Arg Cys Leu Asp
 885 890 895
 Gly Arg Arg Asp Cys Ser Lys Val Trp Cys Gly Trp Lys Pro Cys Leu
 900 905 910
 Leu Ala Gly Gln Pro Glu Ala Leu Ser Ala Gln Cys Pro Leu Gly Gln
 915 920 925
 Arg Cys Leu Glu Lys Ala Pro Gly Gln Cys Leu Arg Pro Pro Cys Glu
 930 935 940
 Ala Trp Gly Glu Cys Gly Ala Glu Glu Pro Pro Ser Thr Pro Cys Leu
 945 950 955 960
 Pro Arg Ser Gly His Leu Asp Asn Asn Cys Ala Arg Leu Thr Leu His
 965 970 975
 Phe Asn Arg Asp His Val Pro Gln Gly Thr Thr Val Gly Ala Ile Cys
 980 985 990

Ser Gly Ile Arg Ser Leu Pro Ala Thr Arg Ala Val Ala Arg Asp Arg
 995 1000 1005
 Leu Leu Val Leu Leu Cys Asp Arg Ala Ser Ser Gly Ala Ser Ala Val
 1010 1015 1020
 Glu Val Ala Val Ser Phe Ser Pro Ala Arg Asp Leu Pro Asp Ser Ser
 1025 1030 1035 1040
 Leu Ile Gln Gly Ala Ala His Ala Ile Val Ala Ala Ile Thr Gln Arg
 1045 1050 1055
 Gly Asn Ser Ser Leu Leu Leu Ala Val Thr Glu Val Lys Val Glu Thr
 1060 1065 1070
 Val Val Thr Gly Gly Ser Ser Thr Gly Leu Leu Val Pro Val Leu Cys
 1075 1080 1085
 Gly Ala Phe Ser Val Leu Trp Leu Ala Cys Val Val Leu Cys Val Trp
 1090 1095 1100
 Trp Thr Arg Lys Arg Arg Lys Glu Arg Glu Arg Ser Arg Leu Pro Arg
 1105 1110 1115 1120
 Glu Glu Ser Ala Asn Asn Gln Trp Ala Pro Leu Asn Pro Ile Arg Asn
 1125 1130 1135
 Pro Ile Glu Arg Pro Gly Gly His Lys Asp Val Leu Tyr Gln Cys Lys
 1140 1145 1150
 Asn Phe Thr Pro Pro Pro Arg Arg Ala Asp Glu Ala Leu Pro Gly Pro
 1155 1160 1165
 Ala Gly His Ala Ala Val Arg Glu Asp Glu Glu Asp Glu Asp Leu Gly
 1170 1175 1180
 Arg Gly Glu Glu Asp Ser Leu Glu Ala Glu Lys Phe Leu Ser His Lys
 1185 1190 1195 1200
 Phe Thr Lys Asp Pro Gly Arg Ser Pro Gly Arg Pro Ala His Trp Ala
 1205 1210 1215
 Ser Gly Pro Lys Val Asp Asn Arg Ala Val Arg Ser Ile Asn Glu Ala
 1220 1225 1230
 Arg Tyr Ala Gly Lys Glu
 1235

<210> 45

<211> 194

<212> PRT

<213> Staphylococcus aureus

<400> 45

Ser Thr Asn Asp Asn Ile Lys Asp Leu Leu Asp Trp Tyr Ser Ser Gly
 1 5 10 15

Ser Asp Thr Phe Thr Asn Ser Glu Val Leu Asp Asn Ser Leu Gly Ser
 20 25 30
 Met Arg Ile Lys Asn Thr Asp Gly Ser Ile Ser Leu Ile Ile Phe Pro
 35 40 45
 Ser Pro Tyr Tyr Ser Pro Ala Phe Thr Lys Gly Glu Lys Val Asp Leu
 50 55 60
 Asn Thr Lys Arg Thr Lys Lys Ser Gln His Thr Ser Glu Gly Thr Tyr
 65 70 75 80
 Ile His Phe Gln Ile Ser Gly Val Thr Asn Thr Glu Lys Leu Pro Thr
 85 90 95
 Pro Ile Glu Leu Pro Leu Lys Val Lys Val His Gly Lys Asp Ser Pro
 100 105 110
 Leu Lys Tyr Trp Pro Lys Phe Asp Lys Lys Gln Leu Ala Ile Ser Thr
 115 120 125
 Leu Asp Phe Glu Ile Arg His Gln Leu Thr Gln Ile His Gly Leu Tyr
 130 135 140
 Arg Ser Ser Asp Lys Thr Gly Gly Tyr Trp Lys Ile Thr Met Asn Asp
 145 150 155 160
 Gly Ser Thr Tyr Gln Ser Asp Leu Ser Lys Lys Phe Glu Tyr Asn Thr
 165 170 175
 Glu Lys Pro Pro Ile Asn Ile Asp Glu Ile Lys Thr Ile Glu Ala Glu
 180 185 190
 Ile Asn